a villa, or a mansion is for the use of a family; and it is as far as the public are concerned a private house, or mansion; and the passing stranger need not know that it is anything else: the expression of "mansion," therefore, is not only what the clubhouse will naturally assume, it is really the expression it should have.

But almost every building that has a distinct purpose may have its distinct and corresponding expression,—is susceptible of receiving allegorical or other illustration of its purpose, so as to indicate that purpose; if, in the first place, it be truthfully adapted, and if the architect has the requisite mastery over the resources of the art. If a Gothic church in its perfection is a petrifaction of religion, a truly designed college will be a similar embodiment of literature; a palace, of royalty; an exchange, of commerce. Beauty, however, is not incompatible with any, even with the needful character of a prison, which may suggest ideas of durance and gloom, yet display general forms and proportions on which esthetic feeling has been exercised. Guided by analogy,—a natural association of ideas,—we may find abundant means of giving at least a general tone to every edifice, in harmony with its use; among which may be enumerated the arrangement, size, and character, as simple or decorated, of doors and windows: public buildings, not much divided internally,—consisting chiefly of one great apartment for a large assembly of people, such as churches, chapels, public schools, theatres, concert halls, should have large and expansive doors of entrance, which would not only be convenient, but would assist in characterising them, as such doors would be suggestive of the idea of extensive ingress and egress of people. In places of worship in particular the entrance-doors should be prominent, rendered by ornament conspicuous and inviting, and much wider than they generally are, in order to avoid unseemly thronging and disorder during the discharge of a congregation. Many instances of insufficient means of egress might be cited, causing the exercise of devotion frequently to end with a scene too much resembling a Bartholomew fair. Windows are susceptible of great beauty, great copiousness, and truthfulness, and nice infusion of significance; but in a religious or other building where a solemn or sublime effect is contemplated or sought to be obtained, windows might with great propriety be omitted, or confined to internal courts or gardens, leaving the exterior effect to those grandest of architectural features—the colonnade and dome. The dome contributes much to palatial dignity, and is expressive of the loftiness and breadth that should characterise great national purposes: having its type in the sublimest of all earthly spectacles—the firmament,—it can never be surpassed by any feature of any style as an element of grandeur. It has assuredly never been so applied as to fully exhibit its intrinsic beauty in modern European design.

Towers, though no longer needed for defence, are useful in expression—they signify strength and durability, and may be used to indicate a purpose that is deep-laid in our nature, paramount and indestructible. Colonnades are indispensable to the production of the more elegant and magnificent qualities. Gables, roofs, and chimneys are not to be forgotten or neglected. Every necessary part or feature may become a valuable element of expression and power. Order and style of architecture are means of expression: we are no more bound to one style than to one of the ancient orders of architecture. One is generally better for indicating a given purpose than another. I believe that one indissoluble chain unites all true styles of architecture wherever they have been developed—which are but a harmonious variety of one type. Those who suppose that only the picturesque Tudor will be a favourite in England for domestic purposes, forget the flexibility of the human mind.

Rustication must also be considered as architectural language; and the prohibition of its use would be an unnecessary and irrational limitation of the means of variety and significance. Rustics were much used by the Romans among whom they were chiefly devoted to the grottoes of the rural deities; and among us they may be made means of beauty and power. They give vitality to a wall or pier, and are susceptible in themselves of many shades of expression. They secure relief to adjacent pilasters, and give brilliancy, and delicacy, and value—by means of contrast—to the upper portions of edifices, when employed in basements, to which, as they suggest ideas of strength, they are peculiarly fitted. If stones can be put together in a beautiful or expressive manner, and that they can be and have been none I think will deny, there appears to me no harm in making that manner so prominent as that attention will be drawn to it.

The character of a building is dependant on the choice of material employed, whether brick or stone; or its description, as texture, colour, quality; and its disposition, or arrangement. Quality of workmanship is also something towards indicating a building's destination. Character may be modified by the manner of executing details, individual mouldings, and other members. Purely geometrical ornament is expressive and poetic, and presents a wide field for imagination: an advantage of such decoration is, its not being seen elsewhere. We may have forms by drawing upon geometry perfectly unique, that do not exist entire in nature; and a new creation, so to speak, is thus called up—

"——— An independent world,
Created out of pure intelligence."

All purposes of buildings cannot be expressed by equal beauty. The comprehensiveness of our nature enables us to embrace every shade of character and every facie of beauty, and fits us to sympathise with truthful manifestation of thought and feeling wherever seen. The arrangement, as well as the choice and design of ornaments, is an important point. Concentration is an element of power, but whether ornament be concentrated on particular and important features, or dispersed over the whole façade, depends upon the invariable laws of composition and design, and the influence of the idea that seeks to be expressed. The two sister arts of Painting and Sculpture in their higher manifestations are also among the architect's due resources for characterising his productions; for statuary, basso relievi, or pictures, when properly applied to the embellishment of architecture, are part of the building, which would be incomplete without them, and therefore they are architectural members or features, in not too broad a view of the art: used as far as they are demanded by the architect to carry out his idea; they are architectural embellishments; part of the language of the art. Whatever else Painting and Sculpture may claim to be, they are handmaids of Architecture: one of their offices is to administer to Architecture: they are both something apart from this ministry—something on their own account,—but assuredly that is one of their provinces: they are the architect's auxiliaries, means of expression and power which he has a right to avail himself of in giving the higher tones of expression to his design. All ceiling, mural, and other paintings introduced into the different apartments of a public edifice,—all sculptural subjects, basso relievi, or other works, placed interiorly or exteriorly, should be so chosen and adapted as to further set forth its character and purpose; and if they be so chosen and harmoniously associated with the building, and illustrative of its use, they may, I think, be considered as architectural ornaments; as no less a part of the whole than a modillion or dentil of the cornice. Sculpture originated in combination with, and in subordination and subserviency to, Architecture; and the secret of the great success of the Greeks, as also of the mediæval builders, may be found, I think, in the assistance which each art rendered to the other,—their union for the purpose of giving greater force and significance, like the different organs of life, which, when united, to borrow a simile, expressed the idea no single part could represent.*

S. H.

* To be continued.

## THE GEOMETRICAL PRINCIPLES OF BEAUTIFUL FORMS.

On 6th inst. Mr. Wyndham Harding delivered a lecture at the Government School of Design, Somerset House, on Mr. Hay's theory of the geometrical principles of beautiful forms.

Having recently* given an account of Mr. Hay's views we shall at present confine ourselves chiefly to Mr. Harding's own introductory remarks on the subject of his lecture.

The subject of consideration, proceeded the lecturer, is form as appearing primarily in nature and natural objects—trees, flowers, leaves, mountains; and, secondarily, as artistically applied in *sculpture*, the *plastic arts*, and the *arts of ornamental surface design*, disregarding, for the moment, the aid which colour, light, and shade lend to these arts, and confining ourselves to what is understood by the outlines and symmetry of the designs. I will not waste your time by attempting a definition of beauty. I will assume that there are certain objects which, in their form and in the proportion of their parts both to each other and to the whole object, affect the true and refined sense of human sight pleasingly, and may be regarded as fair types of beautiful forms.

Such, for example, is the human figure as generalised in such a statue as the Apollo Belvedere; such are the leaves of plants, especially those which have been widely used in architecture—the Grecian acanthus leaf and the Egyptian lotus.

For architecture we find such objects in buildings such as the Parthenon of Athens, in the moulding of pure Grecian architecture, beginning with the Cyma Recta Reversa and the Ovolo.

In plastic or fictile art, in the vases of Etruria and Greece, such as we see in the British Museum.

It would be easy to extend the list. These objects I assume to be admitted as types of beautiful and well proportioned forms.

In what, then, does the secret of their beauty consist, and how may they, or forms with similar excellent qualities, be reproduced at will? This is the problem the designer has to solve, and which Mr. Hay thinks he can assist him to do on principles so broad and comprehensive as will enable the designer himself in turn to become the creator of forms as beautiful, although original, as those which he is now in despair content to copy.

It is pertinent at this stage of the inquiry to ask, what has been the opinion of the ablest men on this somewhat subtle point. The reply is, that there is a wonderful consistency of view among the most profound physical philosophers of every age: that the principles of beauty in form consist in a certain mode of applying and combining certain simple elementary geometrical figures, and attending, in the disposition of objects and of the parts of objects, to certain simple numerical ratios. On this point I will trouble you with one or two references.

In the well-known passage from the Timæus of Plato, the following expressions occur:—"But when the artificer began to adorn the universe, he first of all *figured* with forms and numbers fire, earth, water, and air."†

Our own great authority, Sir Isaac Newton, makes use of these memorable words, in replying to Mr. Harrington's suggestion, that certain simple mathematical ratios, technically called harmonic ratios, would be found to be applicable to proportions in architecture. Mr. Harrington's words are these:—

"I have conjectured that the other most general established architectural ratios owe their beauty to their approximation to the harmonic ratios, and that the several forms of number are more or less agreeable to the eye as they suggest the ideas of figures composed of such ratios. I am sensible these matters have been touched upon before, but my attempts were to reduce matters to some further

* Vide p. 363, ante.

† He then proceeds to define three elementary triangles generating four bodies, which he conceives are the elements of the most beautiful forms in external nature, the proper understanding of which lies at the base of the study of form. We must endeavour, he adds, to harmonise the four sorts of bodies excelling in beauty, and to evince by this means that we sufficiently comprehend the nature of these.

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